

The Text

VOL. I

LOWELL TEXTILE SCHOOL, APRIL 26, 1919

No. 12

Alumni Notes

Samuel Perlman, B. T. C., '17, has recently received his discharge from the Chemical Warfare Service and will report in the near future to the E. I. Du Pont de Nemours & Co., at Wilmington, Del., from whom he has accepted a position as an organic textile chemist.

Elliott K. Hall, '10, recently returned from over-seas as Sergeant, 103rd Infantry, 26 Division.

Correction from April 10th issue, should read: L. T. S. A. A. director for two years, Wm. Walker, Jr., '11, Supt., Ottaquechee Woolen Co., Evarts, Vt.

Russell L. Brown, '17, was recently commissioned a 2nd Lieut, Field Artillery, U. S. Army, and arrived from France with the "Y. D."

Hosley, '17, and Thayer, '17, of the 26th Division remained in France when the division sailed and are now attending a French educational institution.

Powers, '17, and "Dick" Hadley, '17, members of Battery F, 102nd Field Artillery were recent visitors at the school, they having only recently arrived from France with the (Y. D.).

C. L. Finch, Supt. Broadalbin Knitting Co., Ltd., of Broadalbin, N. Y., was a recent visitor at the school. He was very favorably impressed with the improvements made in the school equipment since he was a student in 1914-15.

SENIOR HOP

Owing to the fact that the annual school dance has been postponed and a large number who had intended to attend will be disappointed, a number of the members of the Senior class have decided to substitute an informal private "hop" in its place. This will be held in Colonial Hall, May 2nd. Savage's Orchestra has been secured and tickets will be issued Monday. No attempt will be made to make any profit, but if any surplus is secured it will be turned over to the L. T. S. A. A. Subscription \$2.00 per couple.

CONVENTION PLANS CHANGED

Because of the parade in Boston this week-end, the date for the 16th Annual Convention of the Phi Psi Fraternity has been changed to May 2nd and 3rd. The place has also been changed from Raleigh, N. C., to New York City. Sanborn, Anderson and Clayton have been chosen to represent the local chapter.

The Story Back of the Picture

THE STEAM TURBINE

By L. C. LOEWENSTEIN

The rapid substitution of rotating for reciprocating machinery has been one of the most striking engineering developments of recent years. This was primarily due to the marked success of the steam turbine and today it can be said that the steam turbine has practically replaced the reciprocating engine.

The steam turbine is primarily a high-speed prime mover and is therefore admirably adapted for direct connection with electrical generators. The growth of the electrical industry can be attributed largely to the success of the steam turbine and today units are built having capacities up to 75,000 h. p. Most of the central stations for the furnishing of electrical power and lighting have steam turbine-driven electrical generators installed. It would not have been possible to build units of such large sizes in reciprocating machinery and even in smaller units the steam turbine occupies one-eighth the floor space, weighs only about one-tenth as much, and is far more economical in steam consumption which means saving of coal.

Steam turbine generators when installed in industrial plants are designed to operate under a variety of conditions. In cotton mills, the turbine will not only furnish electrical power but the exhaust steam can be automatically extracted from the turbine and used for heating purposes. In the cotton industry, a large quantity of low pressure steam is needed for the various manufacturing processes in making cotton cloth such as bleaching, etc., and the steam turbine is designed not only to deliver electrical energy for supplying the various machinery throughout the mill with power but also to furnish as much low pressure steam for general heating purposes as is necessary. This is also true in the sugar industry. In the manufacturing of sugar a large quantity of low pressure steam is used for cooking and the steam turbine not only furnished the power for driving the machinery but also enough steam to do the cooking.

In some industrial plants low pressure steam is available. Most of this, years ago, was because the old reciprocating engines were running non-condensing, that is, exhausting the steam to atmosphere. By installing a low pressure steam turbine with a proper condenser, it was possible to gain again as much power as previously by using the

steam that had heretofore been exhausted to atmosphere.

In our own plant at the Lynn Works, two of the units furnishing electrical power for the various machine tools are run by high pressure steam from the boilers, but in the winter time exhaust steam at a few pounds pressure into the heating mains. In the summer, these units will utilize all the exhaust steam from the Testing Department, which at times is sufficient to carry the full electrical load of the generators.

Not only in central stations and in industrial plants has the steam turbine shown its usefulness. On account of its better economy in coal consumption, it has now been applied for marine work and we can say that in the near future the steam turbine will supplant the reciprocating engine in driving boats. Although the steam turbine is a high speed apparatus and the propeller of a boat must necessarily run at slow speed in order to drive the boat efficiently, there are two means by which the high speed turbine can be used for driving a slow speed propeller. First, by the introduction of reduction gears between the turbine and the propeller shaft, and secondly, by installing a high speed turbo-generator to drive slow-speed electrical motors direct connected to the propeller shafting. During the war, a

Continued on Page 4

Meeting of Engineering Society

CONSTITUTION ADOPTED OFFICERS ELECTED

At a recent meeting of the Textile Engineering Society, the constitution as drawn up by the committee, was accepted as read.

The election of officers then followed with the following results:

President: Mr. Merrill
Vice-President: Mr. Wells
Secretary: Mr. Forsaith
Treasurer: Mr. Ball

A motion to the effect, that no dues be paid this year failed to pass, and without doubt the society will start something before the end of the year.

Sophs Trim the Juniors

FIRST BIG INTER-CLASS GAME IN COMPETITION FOR THE BIG CUP

SWEETS' TWIRLING FEATURES

At last the big contest to see who would have the right to put their numerals on the big cup in the library got under way. In other words the Sophs played the Juniors. Before the game started the Juniors owing to their last year's "rep" were the favorites, but the Sophs were not daunted and got away to a two run lead in their half of the first inning. The effect on the Juniors seemed to be one that they could not overcome and when the final inning was over the score stood six to two in favor of the SOPHOMORES. The Juniors thought that luck was against them but offered no alibis. They will challenge the winners of the next game to be played between the Freshies and the Sophs.

The lineups were as follows:—

Sophomores

	ab	r	h	po	e
Lemire, c.	3	1	1	5	1
Sweet, p.	3	1	2	0	0
Berlin, 1st	3	1	1	8	1
Boylston, 2nd	3	0	0	1	0
Washburn, 3rd	3	1	1	0	1
Clayton, ss.	3	1	1	1	0
Ellis, lf.	2	0	0	0	0
Morrill, cf.	2	1	1	0	0
Bidwell, rf.	2	0	0	0	0
	6	7	15	3	

Juniors

	ab	r	h	po	e
Scott, c.	3	0	0	3	0
Scanlon, p.	3	0	1	0	0
Goldman, 1st	3	0	1	9	1
Watkowitz, 2nd	2	0	1	0	0
Forsaith, 3rd	2	0	1	1	0
Doyle, ss.	2	1	1	0	0
Brainard, lf.	2	0	0	1	0
Almquist, cf.	2	1	1	1	0
Sulke, rf.	2	0	1	0	1
	2	7	15	2	

The Score

Innings	1	2	3	4	5	r	h	e
Sophs	2	0	2	2	0	—	6	7
Juniors	0	1	0	1	0	—	2	7

Inter-Class Standing

	Games	Won	Lost	Pct.
Sophomores	1	1	0	1.000
Juniors	1	0	1	.000
Freshmen	0	0	0	.000
Seniors	0	0	0	.000

The Text



Published once a week thruout the college year for the students of Lowell Textile School.

Editor-in-Chief

Charles H. Forsaith, 1920

Faculty Editor

Mr. L. H. Cushing

Business Managers

Harold E. Clayton, 1921

Theodore W. Boylston, 1921

Class Representatives

Arthur J. Anderson, 1919

R. Stevens, 1919

Boris Lewstein, 1920

Milton Washburn, 1921

Jack Goosetry, 1921

Robert Burnham, 1922

W. G. Brown, 1922

Subscription price 50c. for remainder of college year. Single copy five cents.

Make checks payable to The Text.

Lest there be any misunderstanding, the publishers of "THE TEXT" take this opportunity to state that this paper has no faculty censor. The member of the faculty, who was chosen as Faculty Editor, supplies "faculty" news of interest to the student body, and does not act in the capacity of censor.

EDITORIAL

"UPSTREAM"

In past years it has been a very hard task to pull off an "UPSTREAM DAY." Some may doubt this statement, but ask any member of past committees, and he will tell you that everything seemed to be left until the last minute and the fellows showed no "pep" until about that time. Why this should be is an unexplainable fact, when you stop and consider the purpose of the day and what it means. Upstream is a day when instructors and students meet on an equal footing, all formality being dropped, and everyone enjoying himself to the uttermost. This is one of the school days when all thought of studies, lectures, exams, and the like are pushed to one side and the spirit of recreation holds sway.

If such are the facts, then why all the argument? Some fellows say it is expensive, some claim a previous engagement, etc., etc. But, this year with almost every fellow receiving his bonus from the government, and only half tuition to pay, the "expense" excuse is surely a poor one. As to the previous engagement alibi, there should be none of them this year, for the committee will see to it that "UPSTREAM" is talked up two or three weeks before it comes off, and surely no Textile fellow

has become so important that he makes engagements that far ahead. In any case if school was in session you would attend, therefore you can go "UPSTREAM."

What are you going to do when the first call comes for you to buy a ticket? Are you going to wait to see if the success of the day is assured before you decide to go, and if you like the programme, or are you going to sign up as quick as you can, resolving that the day will not be a failure as far as you are concerned? If you do the latter, "UPSTREAM" will be assured, and the committee can take it easy. Of course the sooner the committee know how many are going they can prepare a programme, and the more time they have the better it will be. Therefore when the time comes buy your tickets as soon as possible, and then help to make 1919 UPSTREAM THE BIGGEST AND BEST EVER.

Textile Evening Class Graduates

SMALLER THAN USUAL DUE TO
WAR'S INROADS—IMMIGRATION
BUREAU OFFICIAL MAIN
SPEAKER

The graduation exercises of the evening class, Lowell Textile School, took place last Wednesday night, a much smaller class than in preceding years, on account of the demands made upon the men, in the rush of war orders in the mills. President Charles H. Eames, who opened the exercises, said that when the school session was started in October it was a grave question whether or not the evening school would be continued, because the mills were running overtime on war material.

A. G. Cumnock, chairman of the board of trustees, in his address of welcome said that though the numbers in the school are small, yet men have been turned out into government service, where they have been of great value. Some have been inspectors of clothing for the army and the navy, and have saved thousands of dollars to the government.

The principal address was given by Bernard J. Rothwell, chairman of the bureau of immigration. "It seems to me," he said, "that this school is making skill that is going to be transmitted; and New England is going to depend largely, for its future, upon superior skill."

On the problem of the immigrant, he said that the country has suddenly

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Washburn Representing Textile Christian Association

J. Milton Washburn, '21, has been chosen to represent Textile Christian Association at the Presidents' Conference in Worcester, held under the auspices of Worcester Polytechnic. The conference begins Friday evening, April 25th, and ends Sunday noon, April 27th.

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A FEW REMINDERS



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Evening Class Graduates

Continued from Page 2

waked up to the fact that we are a polyglot nation, and that that condition involves a serious menace if not wisely handled. One-sixth of the entire population is foreign-born, and every third person is either foreign-born, or native-born of foreign parentage. Three millions of these are entirely illiterate even in their own language. This is a very serious problem to handle. On one side we have the indifference, neglect and often the contempt of the native-born, and on the other side we have the prejudice, the suspicion, the super-sensitiveness of the foreign-born. It is extremely difficult to bring these two opposing forces together. Out of this condition, three hundred racial national organizations have been born. A strange outcome of the war has been that racial sentiment is stronger today than it was before the war, this being the result of discussion that has gone on in relation to the self-determination of nations. As a result, a very large emigration is threatened. As soon as passports are obtainable at least one and a half million of these people, mostly men, will go back to their native lands. The chances are that a very considerable portion of the new immigrants will be those most difficult to amalgamate, because the claim of religious persecution is allowed as an offset for illiteracy. In any case we are making an unfortunate swap, because those who go back to their own countries have to a certain extent become accustomed to our methods of living. Serious labor disturbances are likely to result.

These problems can be solved only through Americanization. In the beginning it is most important that we Americanize ourselves, that we should learn who and what these people in our midst are, what their background is, their history, and their traditions. We must recognize their race consciousness, their national pride. We must not purchase unbounded industrial expansion at the cost of political and social stability. Therefore we must see that those coming in are properly educated to take part in the life of the country and to be beyond the reach of the wild anarchy that is sweeping over Europe.

We must first inspire the foreign-born with faith in American justice, by seeing that they get it. See to it that they acquire a working knowledge of the language. Tell them the stories of our great men, especially of those who have worked their way up to the top. Tell them of the obligations as well as the opportunities of citizenship. Respect their religious affiliations. And see to it that they are included in the community activities. No polyglot nation has ever been perpetuated. A common language is necessary to bind the people together.

James H. Spurr, Jr., president of the alumni association, awarded the prize that is given annually to the student of highest achievement, the winner being Henry Dustin Grimes.

FACT AND COMMENT

As yet those bubblers have not put in an appearance, but that does not lessen the need of them.

To bad the dance had to be given up, but if it became a question between a dance and Upstream it is probable that the latter is the more popular.

No alibis acceptable, this year, for not going Upstream, from either instructors or students.

The fact that we had just had a ten day "lay off" from work was non-apparent last Monday. It could not have been due to the fact that the vacation was spent in study, could it?

The way our janitorial staff fixed the quadrangle makes us wonder if there is anything "Bill's" cohorts cannot do. They are to be congratulated on this last work, and now let us hope that everyone will respect the signs. We would have recommended a finer quality of stone however, as the present grade will be hard on the bare feet of the Freshmen(?) next September.

The Y. D. parade will be strongly represented by L. T. S. men.

Hardly a day goes by but what some khaki-clad man, wearing his three gold service stripes, is seen around the school. Although the faces and names are unfamiliar to many it isn't long before their identities are discovered, and it is with pride we realize that they are "Textile" men, who went with the Battery. Some of those who have been around are "Jack" Holden, Powers, R. Brown, "Dick" and "Skipper" Hadley, C. Mathieus, Larrett, E. Mathieus, Webster.

Although the end of the year is not far off new students continue to enroll and former students to return. Few of the undergraduates realize that the enrollment has been steadily increasing until at present there is one hundred and seventy men at Textile.

Next year should be the biggest year in history, for indications point towards a very large entering class.

Carter, formerly of Wesleyan, is now taking a course at Textile. Another new student is Weff, formerly of Williams, who is taking the wool course.

G. Dexter, formerly in the class of 1917, but who left to enter the service, has returned to school. Dexter was eight months overseas with a machine gun unit.

THE BASEBALL SCHEDULE

April 26th—Exeter at Exeter.
April 30th—Holy Cross (1922) at Lowell.
May 3rd—Andover at Andover.
May 10th—N. H. State at Durham.
May 14th—Groton at Groton.
May 17th—Huntington at Lowell.
May 24th—N. H. State at Lowell.

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Say, fellows, let's stop at **PAGE'S**

A Visit to the Lowell Electric Light Plant

The afternoon of Monday, March 24, 1919, the Steam Engineering Class, of which I am a member, visited the Lowell Electric Light Plant. The instructor of the class, Mr. Tuck, and the chief engineer of the plant working in conjunction endeavored to make known to us, how each operation in the handling of the coal and water was done there.

A side track of the Boston & Maine R. R. is laid in the yard. This fact materially reduces the cost of the coal since it eliminates carting, which would be a considerable amount since these people use from 80 to 90 tons of coal a day. The capacity of their yard is 150,000 tons. The cars are unloaded by an electric crane; this crane has a bucket shaped like an orange shell at the end, made fast to a chain. With this arrangement a car is unloaded in about fifteen minutes and only three men are required to do the work, since the coal which they use, Bituminous, comes in lumps, the firm has installed a crusher. The principle of this machine is one of passing the lumps between a series of rolls which pulverize them. This pulverized coal as it leaves the crusher falls upon an endless belt about fifteen inches in width, which carries it into the Distributor which is built over the boiler-room. The capacity of this Distributor is seven hundred tons, and this fact practically insures the company against the need of carrying the coal in case of a break down. Chutes which are 18 x 18 inches in cross section are connected to the bins, they are also connected to the furnaces. The company uses three Sterling and three Babcock & Wilcox boilers. Taylor stokers feed the coal to the fires. By this means the coal is automatically carried to the boiler. The ashes are removed from the grate by means of a hand arrangement. It consists of movable plates, arranged to a lever. As the lever is pulled these plates assume a vertical position and the ashes drop through a chute into a small box car which is directly under it, and also on tracks. The car is pushed out by hand to the end of the track. Here there is a large pit and the ashes are dropped in. The city teams come and get the ashes here. The city uses them for grading. The plant is located near the Concord river, and the water is pumped up. Since the water contains impurities, it is passed through coke. The water which is fed into the boiler must be warm, as near 212°F as possible. They use their exhaust steam to heat it. The water is pumped into the furnace. For this purpose they have installed several pumps some of which are: 1st a Terry Feed Water Pump, which can deliver 350 gallons per minute at 250 pounds pressure, gauge, this one has three stages; 2nd they have another Terry, this one has four stages, and it can deliver 500 gallons per minute at a little higher pressure; 3rd a Duplex Com-

pound Feed Water Pump, which can deliver 400 gallons per minute at 250 pounds pressure gauge.

The boiler-room of this plant is a good example of an efficient one. Mechanical devices of all sorts have been installed to do away with the high cost of wages.

The Story Back of the Picture

Continued from Page 1

great many steam turbines with gear drive have been installed for driving vessels. The United States Navy, in order to investigate the merits of the various means for driving ships, built three boats called the *Cyclops*, the *Neptune* and the *Jupiter*. The *Cyclops* was equipped with reciprocating engines; the *Neptune* with a turbine driving the propellers by gearing, and the *Jupiter* by a turbo-generator driving the propellers by low speed motors. The result of careful testing showed the advantages of the electric propulsion scheme and recently the United States battleship *New Mexico* was put into commission, being the first boat of its size to be propelled by electricity. It has proved to be a marked success.

The success of the steam turbine led engineers to design high speed centrifugal pumps and centrifugal compressors to replace the old reciprocating pumps and reciprocating blowers. Just as the steam turbine has supplanted the reciprocating engine so is the steam turbine-driven centrifugal pump and the centrifugal compressor supplanting the older types of water pumping and air compressor machinery. For instance, the application of steam turbine-driven compressors has revolutionized the making of pig iron in blast furnaces in recent years. Today steam turbines are used either direct connected or connected through reduction gearing to all kinds of apparatus which requires a prime mover.

It is interesting to note the variation of sizes of steam turbines manufactured today. Steam turbines are built in less than one horse power capacity, as for instance, on the top of locomotives to furnish current for locomotive headlights. All sizes exist, from this small size until we find in very large central stations located in cities like New York, Chicago and Boston turbine-driven generating units of 70,000 horse power each, each unit furnishing enough power to supply all the lighting and power requirements of an average size city.

—Lynn Works News.

Afterthoughts on the Game

Both pitchers showed great control, only one man being walked during the whole game.

Perhaps if the Juniors get going earlier next time they may win.

At times it looked as if the Sophs had the "ump" with them.

If Scott's clout had been a little bit higher it would have gone over the building.

Sulke after drawing a pass, stole second in those army shoes, which you must admit was good work.

Morrill in spite of the crowd put up a classy game both in the field and at the bat.

Use American Dyes

The making of American Dyes is of enormous importance to our country. Until the Great War we had depended chiefly on Germany for the dyes for our cloth, leather and paper. Four years ago our Textile Mills were in danger of closing for want of Dyes. The making of American Dyes in such volume and variety as to take care of immediate needs has kept the mill workers in employment. This complex dye industry now makes use of vast quantities of our priceless Coal by-products which otherwise would be utterly wasted.

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